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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,017	10/02/2003	Hung Liang Chou	02734.0517	6440

22852 7590 12/10/2007  
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EXAMINER
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CORDRAY, DENNIS R

ART UNIT	PAPER NUMBER
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1791

MAIL DATE	DELIVERY MODE
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12/10/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/676,017	Applicant(s) CHOU ET AL.	
	Examiner Dennis Cordray	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 October 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 119-153,231,233-271,273-311 and 313 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 119-153,231,233-271,273-311 and 313 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's amendments and arguments, filed 10/21/2007, have overcome the rejection of Claims under 35 U.S.C. 112, first paragraph. The cited original claims and the data provided in Figures 33 and 34 disclose embodiments wherein the lower and upper SAT capacity limits are sufficiently supported. Accordingly, the rejection has been withdrawn. However, due to the amendments, new rejections under 35 U.S.C. 112 are presented.
2. Applicant's amendments have also overcome the rejection of Claims under 35 U.S.C. 103(a) over Cook et al and others. The rejection has been withdrawn. Cook et al only teaches treatment with a surfactant to render fibers hydrophilic.
3. With respect to the rejection of Claims under 35 U.S.C. 103(a) over Anderson et al and others, the rejection has been reformulated to address the current amendments.
4. Applicant states on p.31 that "The present inventors have surprisingly found that compounding thermally bondable fibers with at least one polymeric material having at least one hydrophilic portion to affects the ability of those fibers to be dispersed in an aqueous solution...". The particular method of forming hydrophilic fibers is one of several methods listed on pp 15-16, paragraphs 69-72, along with the previously claimed treatment with surfactants. It is noted that the originally presented claims recited only treatment by surfactants rather than a compounding treatment. It is further noted that none of the examples recites any particular method of rendering the fibers hydrophilic. In fact, the Examiner did not find any example that recites a treatment of

any kind to render the fibers hydrophilic, thus the examples do not appear to support any surprising or unexpected results using the newly claimed treatment over any other hydrophilic treatment, or over fibers having no hydrophilic treatment at all.

The elastomer bonding material disclosed by Anderson et al has been discussed previously. Applicant has asserted that Anderson's web would not have the recited SAT capacity. The arguments of counsel cannot take the place of evidence in the record. In re Schulze, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965); In re Geisler, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997) ("An assertion of what seems to follow from common experience is just attorney argument and not the kind of factual evidence that is required to rebut a prima facie case of obviousness."). The structure of the product is disclosed in the references at least to the extent claimed, and one of ordinary skill in the art would thus have expected to obtain the claimed properties in the product. No evidence has been provided to show that the web made by Anderson et al as detailed in the current rejections cannot have the claimed properties. The absorbency described by Anderson (total water absorbency or TWA) and referenced in the previous arguments is for webs made without hydrophilic treatment to the thermoplastic fibers. As discussed in an earlier Office Action, it was known to those of ordinary skill in the art that hydrophilic treatment of synthetic fibers increases the absorbing properties, thus the use of hydrophilically treated fibers would be expected to produce a web having a greater absorbency than produced by untreated fibers.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 141, 255 and 295 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 141, 255 and 295 recite that the polymeric material in Claims 119, 233 and 273, respectively, is chosen from at least one of an anionic, a zwitterionic, a cationic and a non-ionic surfactant. The original Specification recites on pp 15-16 that, in one embodiment, the fibers are treated with a surfactant. In one embodiment, the surfactant is chosen from at least one of an anionic, a zwitterionic, a cationic and a non-ionic surfactant. In another embodiment, the fibers are treated by compounding the bondable portion with other polymeric materials having hydrophilic portions. Thus the treatments by surfactant and compounding are disclosed as separate embodiments. Nowhere is it stated or implied that surfactants can be used as the polymeric materials having hydrophilic portions.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 119-153, 231, 233-271, 273-311 and 313 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 119, 233 and 273 recite "thermally bondable fibers compounded with at least one polymeric material having at least one hydrophilic portion" but fail to disclose what is meant by "compounded." Are the fibers mixed with a polymeric additive that can physically attach to the fibers to render portions of their surface hydrophilic? Or are the fibers mixed or reacted with a polymeric additive that chemically bonds to the fibers? Are the polymers used to make the fibers mixed with another hydrophilic polymer and co-formed into fibers? Are the polymers used to make the fibers co-polymerized with another hydrophilic polymer and co-formed into fibers? Or is another kind of compounding embodied by the claims?

Claim 119 recites the limitation "said hydrophically thermally bondable fibers" in an earlier portion of the claim. There is insufficient antecedent basis for this limitation in the claim.

The remaining claims depend from and inherit the indefiniteness of Claims 119, 233 or 273.

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 119-139, 141-153, 231, 233-245, 247-253, 255-271, 273-280, 282-285, 287-293, 295-311 and 313 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson et al (WO 96/12615) in view of Shiba et al (4804378), Oku et al (5254399) and (Smook, Handbook for pulp and Paper Technologists, 2<sup>nd</sup> ed, Angus Wilde Publications, 1992), and further as evidenced by Horimoto et al and Kobayashi et al (5489469).

Claims 119-121, 129, 133, 137-138, 141-149, 231, 233-235, 243, 247, 251-252, 255-263, 268-271, 273-275, 283, 287, 291-292, 295-303 and 308-311: Anderson et al discloses a method for making a fibrous web comprising:

a) forming an embryonic (nascent) web from a furnish made up of from 6-50% by weight bi-component fibers having a length from about 1/8 in to about 1/2 in (about 3 to 12.5 mm) and the remainder lignocellulosic fibers (wood fibers) either homogeneously or with a stratified headbox (p 6, lines 13-22; p 12, lines 5-11),

b) drying the web (p 13, lines 1-9).

The basis weight of the web is from 20-60 lb. 2880 sq. ft. ream (approx 21 to 62 lb/3000 sq. ft. ream), which significantly overlays the claimed range (p 6, lines 26-29).

The bi-component fibers are made from polyester, polyolefins such as polyethylene, polyamides and polyacrylics (p 8, lines 18-22). The fiber composition and bi-component fiber length significantly overlay the claimed ranges.

When using a homogeneous furnish, the bi-component and lignocellulosic fibers are in the tissue are homogeneously arranged. Anderson et al discloses that, where a stratified headbox is used, the central core of the web is made up of a substantial

amount of bi-component fibers, thus the web is stratified (p 6, lines 22-26, p 7, lines 6-11). The stratified headbox inherently requires at least two aqueous fiber dispersions, one comprising the bi-component fibers and one comprising the lignocellulosic fibers. Note that the claims do not recite that cellulosic fibers cannot be present in the aqueous solution of bicomponent fibers and vice versa.

Anderson et al does not disclose that the bi-component fibers are modified to exhibit hydrophilicity. Anderson et al also does not disclose the line speed of the papermaking machine. Anderson et al does not disclose the formation index, wet breaking length or SAT of the web. Anderson et al does not disclose dispersing the fibers either sequentially or simultaneously. Anderson also does not disclose use of a slotted screen.

As discussed in the Office Action, mailed 6/14/2007, it was known to those of ordinary skill in the art (see Horimoto et al, col 2, lines 26-36) that hydrophilic treatment of synthetic fibers increases the absorbing properties thereof. Kobayashi et al lends further support, teaching that hydrophilic fibers, such as hydrophilically treated polyester, have high liquid absorbency and diffusion rate (col 7, lines 11-27). Thus, one of ordinary skill in the art would have been motivated to hydrophilically treat the bi-component fibers of Anderson et al to make the product more absorbent.

Shiba et al discloses three methods well known in the art to treat hydrophobic fibers (e.g. -polyethylene, polypropylene, polyester and polyamide fibers) to make the surface more hydrophilic. One method is to treat the fibers using a surfactant; another method is to chemically bond materials having hydrophilic groups to the fibers; and a



third method is by physical surface modification such as plasma fabrication and incorporation of material having hydrophilic groups by kneading (col 4, lines 20-39).

The second and third methods are considered by the Examiner to be methods of compounding the fibers with a material having at least one hydrophilic portion.

As discussed in a previous Office Action, Oku et al (col 6, lines 66-67) and Smook (p 239, last full par in right col and p 324, Table 21-1) teach that tissues are made at speeds from 400 m/min (1312 ft/min) on a slower papermaking machine up to 6890 ft/min on a fast machine.

As also discussed in a previous Office Action, Smook teaches that using fine slotted screens is a methodology commonly employed in modern papermaking systems to more effectively remove small cubical debris (p 111, first 3 pars in left col; p 229, first par in right col).

The art of Anderson et al, Shiba et al, Oku et al, Smook and the instant invention is analogous as pertaining to the making of absorbent tissue products comprising thermoplastic and cellulosic fibers, and to tissue making in general. It would have been obvious to one of ordinary skill in the art at the time of the invention to make the product of Anderson et al at the claimed line speeds in view of Shiba et al, Oku et al and Smook as typical line speeds used in the art. It would also have been obvious to render the bi-component fibers hydrophilic compounding the fibers with a material having at least one hydrophilic portion to enhance the absorbing properties of the web. Physically or chemically compounding the fibers with a polymeric hydrophilic material, including the claimed surfactants would have been obvious as a functionally equivalent choice that

would have yielded predictable results to one of ordinary skill. Using a slotted screen in the formation process would further have been obvious as a commonly used method to better screen out unwanted debris.

It would further have been obvious to one of ordinary skill in the art to obtain the claimed properties of formation index, wet breaking length and SAT in the product so made because, where the claimed and prior art apparatus or product are identical or substantially identical in structure or composition, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). In other words, when the structure recited in the reference is substantially identical to that of the claims, the claimed properties or functions are presumed to be inherent. In the instant case, the claimed composition and method of making are disclosed by and would have been obvious over Anderson et al in view of Shiba et al, Oku et al and Smook, thus obtaining a structure substantially the same as the claimed structure would have been obvious.

The instant Specification recites no particular advantage for the method of dispersing the fibers to form the papermaking furnish. The headbox deposits the furnish and fibers homogeneously to form the web and simultaneous dispersion or sequential dispersion of the fibers into the aqueous furnish are considered by the Examiner to be functionally equivalent options that would have been obvious to one of ordinary skill in the art.

Claims 122-127, 150-153, 236-241, 264-267, 276-281, 304-307 and 313:

Anderson et al and Horimoto et al do not disclose addition of wet or dry strength agents, formation of the tissue web by wet pressing, or embossing of the web.

Smook teaches that it is known in the art to use dry strength resins to improve burst and tensile strength and wet strength resins for retention of strength when a paper is wetted. Smook also teaches that the trend is toward the increased use of synthetic polymers such as latexes and polyacrylamides alone or in combination with starches and gums (pp 224-225). Smook lists many of the claimed wet and dry strength resins as known in the art (p 224, Table 15-4). Thus it is well known in the art to use the claimed wet and dry strength resins. Smook also teaches that wet pressing to remove water and consolidate the web may be considered as an extension of the water removal process that provides a more economical means of removing water from the web than by evaporation. Wet pressing reduces the evaporative load on the dryer section (p 250, section titled "16.9 PRESSING"). Smook further teaches that embossing is used to impart decorative effects to papers and napkins (tissues) (p 346).

It would have been obvious to one of ordinary skill in the art to add the claimed wet or dry strength agents to the product of Anderson et al in view of Shiba et al, Oku et al and Smook as typical additives known in the art to improve burst and tensile strength and for retention of strength when a paper is wetted. Wet pressing and embossing would also have been obvious steps to reduce the load on the dryers and to provide decorative effects on products.

Claims 130, 244 and 284: Anderson et al discloses that the dryer is a through air dryer (p 7, lines 15-17).

Claims 128, 131, 242, 245, 282 and 285: Anderson et al discloses that the web is creped from a Yankee dryer (p 9, lines 9-12; p 13, lines 1-10; p 14, line 14 to p 15 line 14).

Claims 134-136, 248-250 and 288-290: Anderson et al discloses that, prior to winding onto parent rolls, the web and bi-component fibers are cured in ovens at a temperature preferably between 220 and 320 °F, which significantly overlays the claimed range (p 9, line 25 to p 10, line 2).

Claims 139, 253 and 293: Anderson et al discloses that the bi-component fibers comprise polyester, polyolefins, such as polyethylene, polyamides and/or polyacrylics (p 8, lines 18-22).

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Cordray whose telephone number is 571-272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*DRC*  
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